

### III. REMARKS

Claims 1-27 are pending in this application. By this amendment, claims 1, 10, 23 and 26 have been amended. These amendments are being made to facilitate early allowance of the presently claimed subject matter. Applicants do not acquiesce in the correctness of the rejections and reserve the right to present specific arguments regarding any rejected claims not specifically addressed. Further, Applicants reserve the right to pursue the full scope of the subject matter of the original claims in a subsequent patent application that claims priority to the instant application. Reconsideration in view of the following remarks is respectfully requested.

In the Office Action, claims 1-3, 10-15, 22-23 and 26 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Nuio Tsuchida, Yoji Yamada, and Minoru Ueda, Hardware for Image Rotation by Twice Skew Transformations, hereafter "Nuio," in view of Sung-Il Chien and Yung-Mok Baek, Hierarchical Block Matching Method for Fast Rotation of Binary Images, hereafter "Chien." Claims 4-9, 16-21, 24-25 and 27 have been indicated as containing allowable subject matter. Applicants gratefully appreciate the indication of allowable subject matter.

With regard to the 35 U.S.C. §103(a) rejection over Nuio in view of Chien, Applicants initially assert that that the combined references cited by the Office fail to teach or suggest each and every feature of the claimed invention. For example, with respect to independent claim 1, Applicants respectfully submit that, Nuio fails to teach or suggest, *inter alia*, "...creating a rotated image that is substantially free of aliasing error using weighted sums of a plurality of data points of the first image that represent pixel data values of the first image, wherein weighting depends on a skew angle of the first image and data point location in the first image," and

similarly claimed in claims 10, 23 and 26. Instead, Nuio teaches calculating a new horizontal ( $X_2$ ) and vertical ( $Y_2$ ) coordinate value using original coordinates ( $X_1$ ,  $Y_1$ ). To this extent, the calculations of Nuio use coordinate values and not a plurality of data points that represent pixel data values. Furthermore, Nuio indicates that the data values of its pixels remain unchanged by stating, "...each pixel of the image is shifted in parallel with each coordinate axis." Page 527, col. 1, final paragraph; see also page 528, col. 1, immediately following FIG. 3. Thus, the calculations in the section of Nuio cited by the Office calculate a new x-coordinate and y-coordinate for an existing value from an original x-coordinate and y-coordinate and do not create a rotated image using weighted sums of a plurality of data points of the first image that represent pixel data values of the first image.

In contrast, the claimed invention includes "...creating a rotated image that is substantially free of aliasing error using weighted sums of a plurality of data points of the first image that represent pixel data values of the first image, wherein weighting depends on a skew angle of the first image and data point location in the first image." Claim 1. As such, the rotated image as included in the claimed invention is not generated by calculating a new x-coordinate and y-coordinate from an original x-coordinate and y-coordinate, as does Nuio. **Instead, the claimed invention uses weighted pixel values to create a new pixel value. Nuio simply shifts x and y coordinates of pixels while retaining the same pixel value.** For the above stated reasons, the coordinate generation in Nuio does not teach or suggest the creation of a rotated image as included in the claimed invention. Chien does not cure this deficiency. Accordingly, Applicants respectfully request withdrawal of the rejection.

With further regard to the 35 U.S.C. §103(a) rejection over Nuio in view of Chien and further in view of unsupported factual assertions that the Office claims are obvious, Applicants submit that the Office's factual assertions amount to Official Notice. Applicants further assert that weighting that depends on a skew angle of the first image and data point location in the first image is not obvious to one skilled in the art as asserted by the Office. Instead, as argued above, Nuio teaches calculating address coordinates by a series of matrix multiplications. Pages 527-528. In contrast, Chien teaches "...replac[ing] traditional calculation of rotation operations with simple matching of block patterns and drawing of their PMPs (predrawn mapping patterns)." Page 488, col. 2, IV. However, Chien neither teaches nor suggests weighting or that weighting depends on a skew angle of the first image and data point location in the first image.

Accordingly, Applicants respectfully request that the Office withdraw the rejection or support this finding, as well as all other unsubstantiated findings, with references that show the features.

Applicants further submit that the Office's factual assertions amount to Official Notice. Applicants further submit that the Office's factual assertions are not properly based upon common knowledge. For example, Applicants assert that a method of rotating a first image in an image buffer is not obvious to one skilled in the art as asserted by the Office. Neither Chien nor Nuio disclose rotating an image in an image buffer. Nuio teaches only an 8-bit microprocessor. Abstract; page 527, col. 2, first full paragraph. Likewise, Chien discloses only an image that is "...obtained by scanning [a] document using optical scanners." Page 487, col. 1, final paragraph. Nowhere does either Chien or Nuio teach or suggest a method of rotating a first image in an image buffer. Accordingly, Applicants respectfully request that the Office withdraw the rejection or support the finding with references that show this feature.

Applicants still further assert that Nuio does not teach or suggest the step of extracting first image data from the image buffer as asserted by the Office. As argued above, neither Nuio nor Chien discloses an image buffer. Instead, the figures of Nuio cited by the Office show only pictures of an original and rotated image. FIG. 6. However, neither the figures nor the accompanying text teaches or suggests that the image is in an image buffer or that the image is extracted from the image buffer. Accordingly, Applicants respectfully request that the Office withdraw the rejection or support the finding with references that show this feature.

With further regard to the 35 U.S.C. §103(a) rejection over Nuio in view of Chien, Applicants assert Chien teaches away from combining the references. In particular, Nuio teaches image rotation that uses matrix multiplication. Page 527, FIG. 1, page 528, FIGS. 2-4. The presence of these matrix multiplications means that calculations must be performed in order to perform the Nuio image rotation. The Office asserts that Section I of Chien also teaches this type of calculation. However, Section I of Chien is an introductory section and the calculations that the Office refers to in this section merely illustrate a “general method” for image rotation. Page 484, col. 1. The remainder of the section and all of sections II, III and IV of the publication teaches “...a hierarchical block matching method for fast rotation of binary images...” that, rather than being a second step as the Office asserts, is an alternative to the “general method.” Page 484, col. 2, para. 1. It is to these sections that the Office refers in its Office Action. The preferred method taught by these sections of Chien includes “...replac[ing] traditional calculation of rotation operations with simple matching of block patterns and drawing of their PMPs (predrawn mapping patterns).” Page 488, col. 2, IV. Conclusions section. As such, the calculations of Nuio are incompatible with the teachings of Chien relied on by the Office.

Accordingly, Applicants assert that the Office has failed to submit a *prima facie* case of obviousness and requests the withdrawal of the rejection.

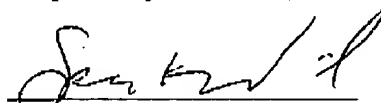
With regard to the Office's arguments regarding dependent claims, Applicants herein incorporate the arguments presented above with respect to independent claims listed above. In addition, Applicants submit that all dependant claims are allowable based on their own distinct features. However, for brevity, Applicants will forego addressing each of these rejections individually, but reserve the right to do so should it become necessary. Accordingly, Applicants respectfully request that the Office withdraw its rejection.

#### IV. CONCLUSION

In addition to the above arguments, Applicants submit that each of the pending claims is patentable for one or more additional unique features. To this extent, Applicants do not acquiesce to the Office's interpretation of the claimed subject matter or the references used in rejecting the claimed subject matter. Additionally, Applicants do not acquiesce to the Office's combinations and modifications of the various references or the motives cited for such combinations and modifications. These features and the appropriateness of the Office's combinations and modifications have not been separately addressed herein for brevity. However, Applicants reserve the right to present such arguments in a later response should one be necessary.

Applicants respectfully submit that the application is in condition for allowance. Should the Examiner believe that anything further is necessary to place the application in better condition for allowance, he is requested to contact Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,



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